NAMIBIA UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Faculty of Health and Applied Sciences

Department of Health Sciences

QUALIFICATION: BACHELOR OF BIOMEDICAL SCIENCES	
QUALIFICATION CODE: 50BBMS	**LEVEL:** 8
COURSE: MEDICAL LABORATORY MANAGEMENT B	**COURSE CODE:** LAM420S
DATE: JANUARY 2019	**SESSION:**
DURATION: 3 HOURS	**MARKS:** 116

SECOND OPPORTUNITY EXAMINATION QUESTION PAPER	
EXAMINER(S)	Ms E van der Colf
MODERATOR:	Dr Pavitra Pillay

INSTRUCTIONS
1. Answer all questions. 2. Please write neatly and legibly. 3. Do not use the left side margin of the exam paper. This must be allowed for the examiner. 4. No books, notes and other additional aids are allowed. 5. Mark all answers clearly with their respective question numbers.

Permissable material

Non programmable calculator is allowed.

THIS QUESTION PAPER CONSISTS OF 4 PAGES (Excluding this front page)

SECTION A (36 MARKS)

QUESTION 1 [10]

Evaluate the statements in each numbered section and select the most appropriate answer or phrase from the given possibilities. Write the appropriate letter next to the number of the statement/phrase. ONE mark for each correct answer.

1.1 The following is not one of the main functions of a professional association
- A. To set and control standards for education of professionals
- B. To develop and promote the interests of the members
- C. To promote good working conditions for members
- D. To provide opportunities for continuous professional development
- E. To promote the status and recognition of the profession

1.2 The entire chain of storage facilities and transportation links through which supplies move from the manufacturer to the consumer.
- A. Lead time
- B. Pipeline
- C. Review period
- D. Point of order

1.3 A type of budget which is continuous and updated periodically.
- A. Flexible budget
- B. Program budget
- C. Capital budget
- D. Rolling budget
- E. Revenue budget

1.4 The following is true when making business decisions:
- A. When cost increases, profit will decrease
- B. When cost increases, profit will increase
- C. When volumes increase, profit and cost will decrease
- D. When cost increases, profit will stay the same

1.5 The following does not apply to cash flow:
- A. Begin with net income
- B. Subtract non-cash expenses (depreciation and amortization)
- C. Subtract debt service (loan back payment)
- D. The gross income of the laboratory (before subtractions) is available to spend on capital items

1.6 The number of cases that existed in a population over a given time period.
- A. Incidence
- B. Prevalence
- C. Point prevalence

D. Epidemic

1.7 Information which is in the form of data
   A. Can lead to an increase in uncertainty
   B. Can lead to a decrease in understanding
   C. Can lead to a decrease in uncertainty and an increase in understanding
   D. Need not be presented within a context that gives it meaning and relevance

1.8 The following question need not be considered during problem solution and feedback:
   A. Who needs to know of this decision?
   B. What action must be taken?
   C. Who is to take the action?
   D. Is the action feasible?
   E. Will all staff members agree with the solution?

1.9 During the problem-solving process the next step to take after problem identification:
   A. Criteria establishment
   B. Decision making
   C. Problem analysis
   D. Problem solution and feedback

1.10 When developing a QC programme, you need not include the following in the comprehensive training programme:
   A. How to use control materials and prepare them for use
   B. How to calculate the mean and standard deviation from known QC data over time
   C. How to interpret QC patterns e.g. shifts
   D. Error that requires immediate action and error that does not require immediate action
   E. The criteria for selection of QC material

QUESTION 2 **[26]**

Define / briefly describe the following terms:

2.1 A problem and steps the laboratory manager should take if it occurs. (6)
2.2 Fixed cost and two examples of it in the clinical laboratory. (4)
2.3 Corrective maintenance and what the laboratory manager should and should not do regarding troubleshooting. (6)
2.4 Predictive value of a diagnostic test and the application thereof in epidemiology. (4)
2.5 Two formats of a document in the laboratory and give four examples thereof. (6)

SECTION B (80 MARKS)

QUESTION 3 [10]

3.1 Motivate why a job description is necessary. (5)

3.2 Develop a competency-based performance evaluation to assess whether an employee is able to perform specimen preparation. (5)

QUESTION 4 [10]

4.1 Give five examples of benchmarking indicators which you could use in your laboratory. Create and fill a table as in the following example:

Performance indicator	Data to gather and analyze
Accuracy	Do the performance reports of the laboratory show that tests are performed accurately and precisely?

QUESTION 5 [10]

5.1 Describe four important aspects to consider when purchasing quality control material. (4x2=8) (8)

5.2 Assume a laboratory is negotiating prices with two vendors for an expensive quality control product.
One vendor offers the product at N$80.00 per mL or N$1440 per box, and the other vendor offers the product at N$1200 per box without quoting a per mL price. The first vendor provides 18 mL for N$1440, while the second vendor only provides 12 mL for N$1200.
Indicate which vendor would you select and motivate your answer. (2)

QUESTION 6 [15]

6.1 Draw a flow chart to illustrate the planning and budgeting process. (7)

6.2 You want to introduce a new test into the laboratory and need to determine the profitability of this test.

Costs per month:	Total fixed cost	N$790.00
	Total net income	N$190.00
	Revenue per test	N$80.00
	Variable cost per test	N$7.00

Determine the break-even point (6)

State what number of tests will have to be performed to make a profit (2)

QUESTION 7 **[6]**

7.1 After installation of a new piece of equipment you would prepare an equipment file. List 6 items which must be included in the file. (6)

QUESTION 8 **[21]**

8.1 Define "efficiency" with reference to diagnostic tests. (2)

8.2 Malume et. al. performed an evaluation study to determine the sensitivity and specificity of a new test kit for HIV screening. The evaluation was done comparing results of the new method with results obtained with the old method (golden standard).

For the following data, calculate the sensitivity, specificity, and efficiency of the new test for detecting HIV infection, as well as the predictive value of the positive HIV test. (12)

HIV status with golden standard	Positive HIV test result	Negative HIV test result	Total
HIV infected	5	3	8
No HIV infection	4	843	847
Total	9	846	855

8.3 Would this test be suitable and reliable to give accurate results in cases of HIV infection? Qualify your reasons. (2)

8.4 Should all tests demonstrate both high sensitivity and specificity? Justify your answer. (5)

QUESTION 9 **[8]**

9.1 Define a laboratory information system (LIS) (2)

9.2 Write notes on the advantages and disadvantages of having a LIS in a medical laboratory. (6)

End of question paper. Good luck!